

SEQUENTIAL REMOTE DUMPING CONTROL FOR POWER BUGGIES

Background of the Invention

Technical Field:

This device relates to load transportation machines of the small self-propelled type having a storage bucket thereon generally referred to in the industry as "power buggies". Such devices allow the operator to transport heavy bulky load over short distances and power dump the contents where needed.

Description of Prior Art:

Prior art devices of this type are well known within the art as power buggies designed to haul loads up to several tons. Such devices are operated by a single user and are self-contained having an onboard engine and drive capabilities. A storage bucket typically has a hydraulic dumping mechanism that is activated by the operator upon reaching the desired dump area. The controls for operation include forward and reverse with associated throttle control, brakes and storage dumping activation, all available to the operator typically from a central operation console.

Heretofore, dumping controls have been positioned adjacent the control input area and can only be activated by the operator removing their hand from

the steering handle bars for activation. Such power buggies and their control features as seen in prior art U.S. Patents 4,207,022, 5,360,256, 6,155,648, 6,322,151 and 6,619,754.

Patent 4,207,022 is directed to a power vehicle for loading and
5 transporting and unloaded heaped materials. The vehicle, a multiple wheeled frame with self-contained power source and drive assembly, has a dump hopper and scooping configuration associated therewith.

Patent 5,360,256 discloses a container and dumping apparatus for use on a motorized vehicle with a resilient release cord associated therewith.

10 Patent 6,155,648 claims a power buggy with bi-directional hand control grips.

Patent 6,322,151 shows a power buggy having multiple controls located near the hand grips including a bi-directional twist activation hand grip association.

15 Patent 6,619,754 is on a power buggy that incorporates a kill switch with other controls near the hand grips for operator safety.

Summary of the Invention

An activation control lever switch assembly on a power buggy for selective continuous and incremental dumping control of the storage and transportation bin thereon. The control lever extends from the handle bar for operator engagement without removing operator's hand therefrom. Sequential locking activation allows
5 for multiple fixed dumping positions with a quick release for return to non-activation or continuous lever control dumping positions.

Description of the Drawings

Figure 1 is a side elevational view of a power buggy equipped with the control dumping lever of the invention;

10 Figure 2 is an enlarged partial side elevational view of the dumping lever assembly and operator handle bars;

Figure 3 is an enlarged partial side elevational view of the dumping lever assembly with activation portions illustrated in broken lines;

Figure 4 is an enlarged partial top plan view thereof;

15 Figure 5 is an enlarged partial sectional view on lines 5-5 of figure 3; and

Figure 6 is a partial side elevational view of the control cylinder of the dumping assembly portions shown in broken lines.

Description of the Preferred Embodiment

Referring to figure 1 of the drawings, a power buggy 10 is shown having a support frame 11 with multiple wheel assemblies 12 and 13 thereon. A material transport bin 14 is pivotally secured to the frame 11 for controlled tilting and dumping as indicated in broken lines by a hydraulic piston and cylinder assembly 15. The power buggy 10 has a self-contained engine and hydrostatic drive assembly generally indicated at 16.

A steering assembly 17 connects to the dual wheel assembly 12 with an interconnecting steering column 18. A pair of steering and control handle bars 19 extend from the steering column 18 and have respective hand grips 20A and 20B thereon in vertical spaced relation to a control support console 21 as will be well understood by those skilled in the art.

Referring now to figures 2-4 of the drawings, a dual dump actuation control assembly 22 of the invention can be seen positioned on one of the handle bars 19 adjacent the hand grip 20A. The dump control assembly 22 has a bifurcated hand activated lever grip 23 pivotally secured to the handle bar 19 by respective apertured mounting tabs 23A and 23B in longitudinally spaced relation to the hand grip 20A. A second dump control element is also provided having a dump knob 24 threadably secured to an end of an upstanding control rod 25 that

extends through the handle bar 19 and is pivotally secured through a transversely extending main lever support pivot pin 26 as best seen in figure 5 of the drawings. The free end of the rod 25 is pivotally secured at 25A to a secondary pivot pin 27 extending through oppositely disposed aligned apertures
5 at 28 in the lever grip 23 below the lever support pivot pin 26. This arrangement affords the operator, not shown, a secondary control input which may be applicable in certain situations.

The dump control assembly 22 as illustrated has a cylinder activation control cable 27 extending therefrom that is secured to the lever grip 23 by a
10 fixation fastener 24. The cable 27 extends through multiple cable mounts 28A and 28B to a cylinder control valve 29, best seen in figure 6 of the drawings, for operation of the hydraulic piston and cylinder dump assembly 15. A progressive lock and quick release bracket 30 of the dump control assembly 22 is pivotally secured to the handle bar 19 in longitudinally spaced relation to said hand lever
15 pivot by a pair of depending apertured tabs 31 formed on its end thereof. The locking and release bracket 30 has a cable engagement arm 32 extending from one of its apertured tabs 31. The arm 32 is apertured at 32A through which the cable 27 can freely pass. A limitation lock and release lever 33 extends on a

horizontal plane from the hereinbefore described tabs 31 in vertically spaced parallel relation beside the handle bar 19 as best seen in figures 4 and 5 of the drawings.

5 The lock and release lever 33 has an upstanding engagement tab 34 on its free end which provides the operator, not shown, activation release and selective engagement as will be described hereinafter.

Referring now to figures 3 and 6 of the drawings, the operation of the dump activation control assembly 22 can be seen wherein the lever grip 23 is moved upwardly as indicated in broken lines in figure 3 of the drawings and the
10 cable 27 so attached will move the activation cylinder valve 29. Simultaneously the locking and release bracket 30 can be wedgeably engaged on the cable 27 as it extends therethrough holding it in selective position by operator input on the tab 34 as best seen in figure 3 of the drawings.

Conversely, the locking and release bracket 30 can be selectively
15 released by the operator, returning the lever grip 23 back to a non-activation fail safe position as shown in solid lines in figure 2 of the drawings.

It will be seen that by use of the dual dump activation lever control assembly 22 of the invention, the relative position and therefore degree of

operational dumping of material transportation bin 14 can be achieved in continuous or incremental lock position affording a precise continuous control of the material transportation bin 14 during the dumping operation.

It will be apparent to those skilled in the art that various changes and
5 modifications may be made thereto without departing from the spirit of the invention. Therefore I claim:

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